COLLAPSE AT THE FOUNDATION

A Study of Literacy among Third Standard Students
In Western Maharashtra

An Interim Report

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Foreword

The study reported here was made possible by a stipend from the Ashoka Foundation. I am grateful to Bill Drayton, Kirtee Shah, Ashok Advani, Kishore Saint and all in the Ashoka fellowship for their trust in me and their forbearance through all these months of silence on my part.

The legwork of the survey was done by Rajani Kale and Sanjay Nikalje, who did most of the testing of students. It was literally legwork, as they had to bicycle around the town and to many villages as well. For their uncomplaining perseverance I am in their lasting debt.

Neelima Joshi helped in many ways, serving as both a clerical assistant and courier. Data analysis was done by Arvind Sidhaye. I feel extremely fortunate to have a computer consultant of such competence available in a town of this size.

I am especially indebted to Dr. Nandini Nimbkar, who read the proofs with intelligence and exquisite care.

Ninad Mate of Aksharchhaya in Pune did the computer composition of the text with his usual high professional standard.

As this report is rather critical, it would not be fair to name places, people, or schools. Unfortunately, this prevents me from acknowledging the generous cooperation of some very competent, dedicated persons: the Administrative Officer of the municipal schools, the Block Education Officer of the Panchayat Samiti, and the authorities of MP, the private school. Because they opened the doors of their schools to me and my associates, this study was possible.

I am also grateful for many conversations with John and Zakiya Kurrien and have

profited greatly from their professional advice. Unfortunately there was not enough time to show them the manuscript of this report before it went to press; it would have undoubtedly been better for their criticism.

Finally, I owe a debt to two men I have never met: Joseph Featherstone and Charles E. Silberman. In his *What Schools Can Do*,* Featherstone stresses the complexity of educational problems and the need for creating humane school environments—a perspective and concern I have long held but have never been able to articulate so well. Silberman's massive *Crisis in the Classroom*** has helped me see the educational problems of a small Indian town in a larger perspective. Even more than that, Silberman's mastery of detail, combined with a broad philosophic outlook and an elegance of style stand before me as an unattainable ideal. In both men's work there is an insistence on the need in education for a fusion of thought, action and feeling (the converse of which is "mindlessness," a word I have shamelessly cribbed from Silberman). Like Ekalavya, then, I acknowledge my debt, though confident that these gurus will not demand a thumb in return!

Maxine Berntsen

*Joseph Featherstone, *What Schools Can Do* (New York: Liveright, 1976).

**Charles E. Silberman, *Crisis in the Classroom: the Remaking of American Education* (New York : Random House, 1970).

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The Survey

In September 1989, with the cooperation of the Administrative Officer of the local municipal schools, I visited a number of classes in standards one to three. I soon had the impression that even in the third standard a substantial number of children had not mastered the basic characters of the Devanagari script, and were unable to read simple words and sentences — skills that are expected to be mastered by the end of the first standard. To test this initial impression I felt it would be advisable to conduct a survey of reading skills in the third standard in the municipal schools, a proposal to which the Administrative Officer readily gave his assent. I was also anxious to find out the level of skills in the rural area, and the Block Education Officer of the Panchayat Samiti gave permission for me to conduct a similar survey in the Zilla Parishad schools of the taluka. For purposes of comparison I also wanted to survey the students of the private school run by a local education society. Permission to do this was granted by the secretary of the School Board. I am very grateful for the generous cooperation of these authorities, as well as that of the teachers and students.

The Test

For the purposes of the survey I constructed a simple test. The test consisted of three cyclostyled (mimeographed) pages containing the basic characters of the Devanagari script, 20 words without abbreviated vowel signs, 10 words with abbreviated vowel signs, and three simple sentences. No conjunct consonants were included.

The breakdown of points in the test is as follows :

Basic characters	46
Words 1 (without abbreviated vowel signs)	20

Words 2 (with abbreviated vowel signs)	10
Sentences (3 sentences of 3 points each)	9
Total points	85

It should be kept in mind that this test had the limited purpose of checking the initial observation that many third standard students had not mastered the skills expected of first standard students. Among the students tested there are undoubtedly some who can read at the third standard level, perhaps even beyond that, but because of the limited goal of the test, this range of achievement will not be apparent.

The Survey

The survey was begun in November 1989 and continued until March 1990. It was conducted by two research assistants, Mrs. Rajani Kale, B.A., and Mr. Sanjay Nikalje, M.A. The team visited each school and called the students out of the class one by one, asking each child to identify each character and word, and to read the sentences. Scoring was fairly liberal in that a student was given credit even if he/she identified a character by giving the associated tag word (i.e., identifying "प" as "पतंग" rather than just "प". For the most part the scoring was objective. Only in scoring the sentences, where the tester had to judge whether the child had understood the sentence, was there some room for subjectivity.

Table 1 shows the breakdown of schools and the number of students surveyed. The municipal schools are designated as MS, and the Zilla Parishad schools as ZPS.

Table 1. Number of schools in each category and number of students surveyed

Category	No. Schools	No. Students
MS	11	582
ZPS	13	656
Private	2*	405
Total	26	1,643

*There are two private schools in the survey: MP, the large school in town having a total of 380 students in the third standard, and PC, a small school in the rural area, having 25 students in the third standard. In much of the following discussion, PC is not taken into account because of the small number of the students.

As all the municipal schools were covered, the results represent the entire population of third standard children in these schools, with the exception of those who were absent when the investigators visited the schools. (In most cases the investigators visited two or three times, so many of the absentees were later covered.) The same is true of the two private schools. However, the 13 Zilla Parishad schools surveyed so far represent only a small percentage (a shade less than 6 percent) of the total number of 217 ZP schools in the taluka. Thus there may be a question as to whether the results for the ZP schools give an accurate picture of the attainment of pupils in the taluka as a whole. In the coming year we hope to do a more complete survey, covering all parts of the taluka and representing all types of schools (single teacher schools, schools with standards 1 to 4, and schools with standards 1 to 7).

Results

Table 2 and the accompanying graph (Fig. 1) present the overall performance of the 1,643 third standard students in the survey. The table and the graph show the percentage of students securing scores in each score interval.

Table 2. Overall performance of third standard students. Percentage of students securing scores in each score interval

Score	% Students
00-05	02.68
06-10	01.16
11-15	01.03
16-20	01.10
21-25	01.28
26-30	01.58
31-35	01.89
36-40	02.31
41-45	02.25
46-50	01.58
51-55	02.56
56-60	03.35
61-65	05.17
66-70	05.60
71-75	06.09
76-80	12.23
81-85	48.39

The above table and graph show that only 48.39 percent of the students have scores of 80-85 (that is, a near perfect score). This means that overall, more than 50 percent of the students in the third standard have not mastered the basic skills

that they should have mastered in the first standard, a result that should be a matter for serious concern. However, these figures are actually inflated by the presence of the 380 MP students. When we look separately at the frequency distribution of scores for the municipal schools, the ZP schools and MP, the picture is even more disturbing (Tables 3-5 and Figs. 2-4).

Fig. 1. Overall performance of third standard students. Percentage of students securing scores in each score interval

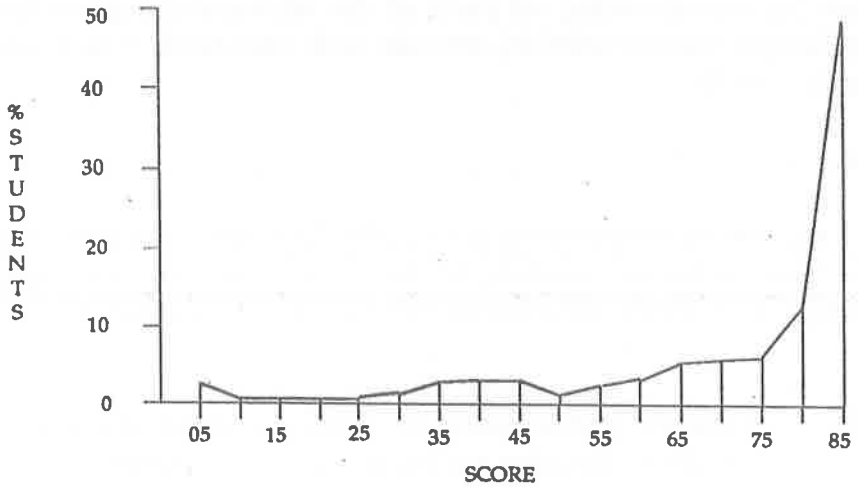


Table 3. Percentage of municipal school students securing scores in each score interval

Score	% Students
00-05	03.95
06-10	01.20
11-15	01.55
16-20	02.06
21-25	01.89
26-30	02.23
31-35	03.09
36-40	04.30
41-45	02.41
46-50	02.06
51-55	03.61
56-60	03.95
61-65	07.04
66-70	07.73
71-75	08.59
76-80	13.23
81-85	31.10

Fig. 2. Percentage of municipal students securing scores in each score interval

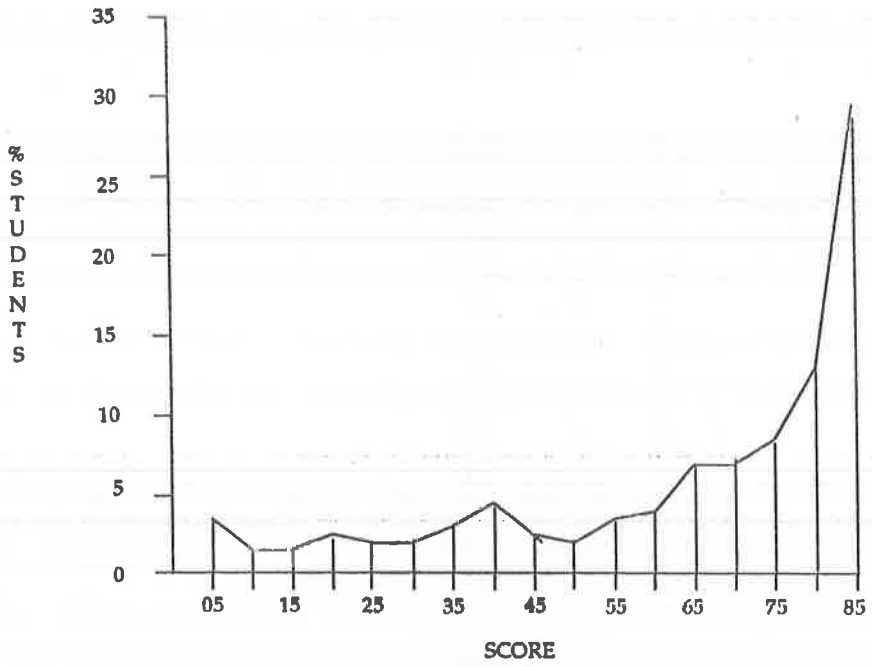


Table 4. Percentage of Zilla Parishad students securing scores in each score interval

Score	% Students
00-05	03.96
06-10	01.83
11-15	01.37
16-20	01.76
21-25	01.52
26-30	01.83
31-35	01.98
36-40	01.83
41-45	03.51
46-50	02.59
51-55	02.44
56-60	04.57
61-65	05.64
66-70	05.18
71-75	05.64
76-80	10.52
81-85	44.82

Fig. 3. Percentage of Zilla Parishad students securing scores in each score interval

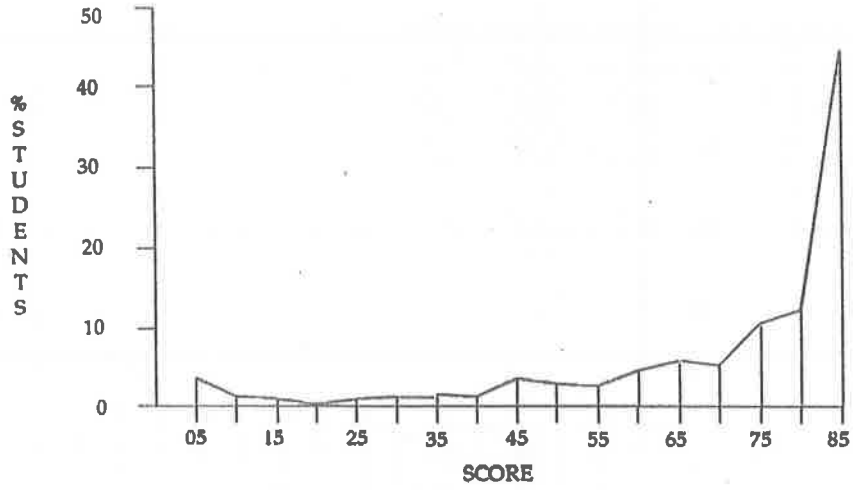


Table 5. Percentage of MP students securing scores in each score interval

Score	% Students
00-05	00.00
06-10	00.00
11-15	00.00
16-20	00.00
21-25	00.00
26-30	00.00
31-35	00.00
36-40	00.26
41-45	00.00
46-50	00.00
51-55	00.53
56-60	00.26
61-65	01.05
66-70	02.37
71-75	02.37
76-80	12.89
81-85	80.00

Fig. 4. Percentage of MP students securing scores in each score interval

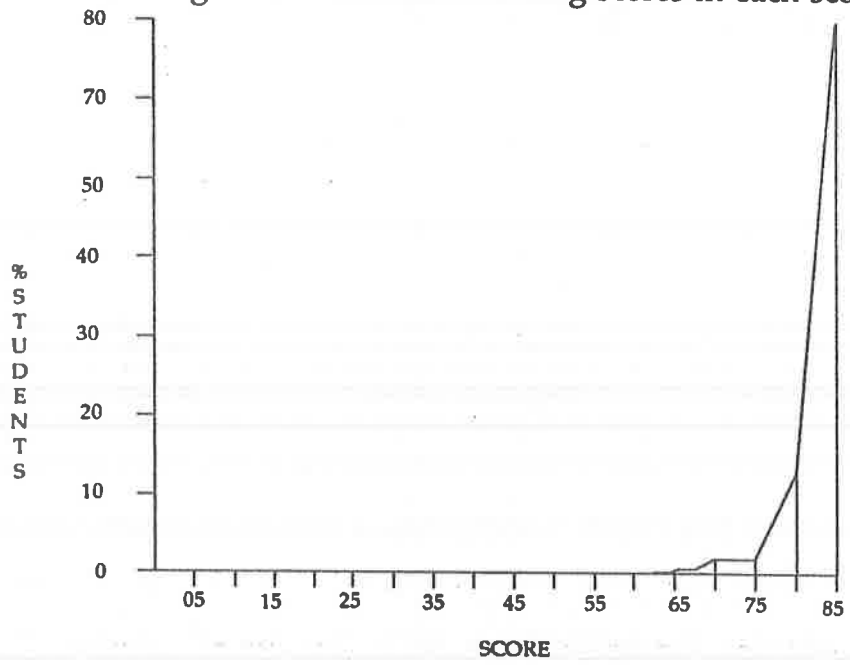
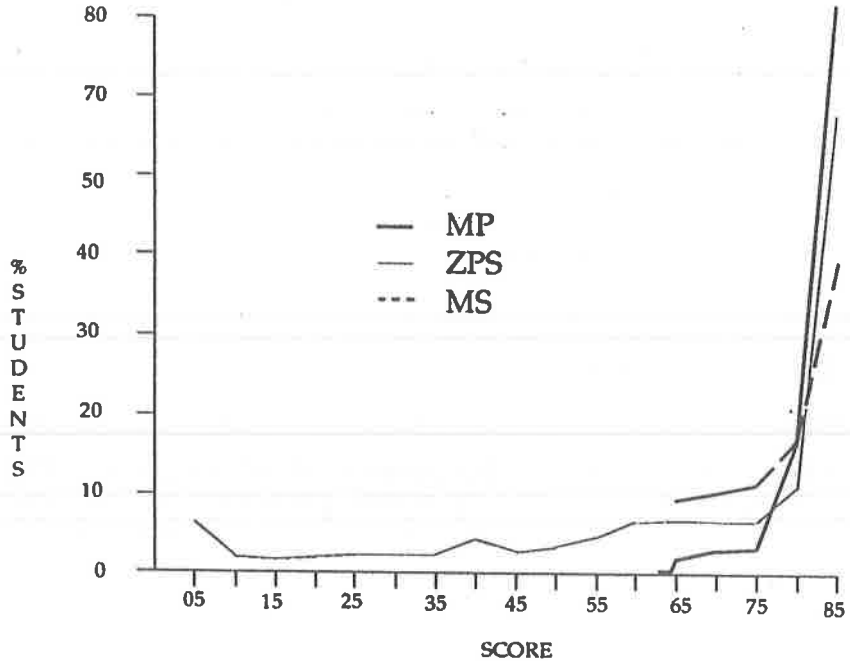


Table 5 indicates that in the MP (private) school 80 percent of the students secured scores in the interval of 81-85, and 12.89 percent in the interval 76-80. This means that only slightly more than 7 percent of the students in the school had scores of less than 76. In the ZP schools, by contrast, only 44.82 percent of the students had scores in the 81-85 interval, and the scores cover the entire range from 0 on up. Still lower, however, are the scores for the municipal schools, where only 31.10 percent students had scores in the 81-85 interval, and again the scores cover the whole range from 0. The graph comparing the municipal, ZP and MP distribution of scores is especially telling (Fig. 5).

Fig. 5. Comparison of MS, ZPS and MP. Percentage of students securing scores in each score interval



Another measure we can use in comparing these three categories of schools is the mean total score (Table 6).

Table 6. Mean total score by school category

Category	Mean
MP	81.71
ZPS	68.10
MS	62.49

Again we see that the three categories of schools maintain their relative position.

When we look at the mean score for each test component by school category we again see that the municipal schools, the ZP schools and the private school maintain the same relative positions for each component (Table 7).

Table 7. Mean score for each test component by school category

School Category	No. Students	Mean Score Letters	Words 1	Words 2	Sent.	Total
MP	380	44.13	19.42	9.50	8.66	81.71
ZPS	656	39.67	15.89	6.49	6.05	68.10
MS	582	37.25	14.67	5.25	5.32	62.49

Table 7 indicates that in the municipal and ZP schools the average student still has difficulty with a few characters of the Devanagari script, but has the most difficulty in reading words (especially those with abbreviated vowel signs) and sentences. Thus my initial impression that a large number of third standard students have not mastered the basic reading skills—that is the basic decoding skills—is clearly substantiated.

Differences among Schools

The figures that we have been looking at for ZP and municipal schools are aggregate figures, representing the overall performance of students in that category. In fact, a somewhat unexpected picture emerges in Table 8, where the 26 schools surveyed are listed in rank order of their means.

Table 8. Mean scores for individual schools for each test component

School/ Town	No. Students	Mean Score Letters	Words 1	Words 2	Sent.	Total
ZP (G)	064	44.98	19.55	9.36	8.66	82.55
MP	380	44.13	19.42	9.50	8.66	81.71
ZP (S)	034	43.71	19.35	8.71	7.97	79.74
ZP (V)	017	44.35	18.88	8.24	7.47	78.94
MS-4	029	43.66	18.55	7.86	8.03	78.10
ZP (GW)	029	43.07	18.24	7.93	7.38	76.62
ZP-1 (T)	055	42.80	17.51	8.07	7.40	75.78
MS-5	061	40.98	16.95	6.69	6.20	70.82
PC	025	41.84	16.08	5.80	5.68	69.40
MS-12	014	41.21	16.43	5.64	5.50	68.79
ZP-2 (T)	047	39.98	15.98	6.55	5.98	68.49
MS-7	084	39.13	15.20	6.23	5.75	66.31
ZP (N)	056	37.64	15.23	6.68	6.30	65.86
MS-3	125	39.09	15.08	5.79	5.65	65.61
ZP (RCV)	016	40.06	14.13	5.63	5.06	64.88
MS-1	040	38.00	14.78	5.88	5.47	64.13
ZP (R)	094	37.17	14.10	5.34	5.14	61.74
ZP-1 (VD)	064	36.14	14.13	4.91	4.98	60.16
MS-8/13	036	34.75	13.39	4.53	5.58	58.25
ZP-2 (VD)	037	33.86	13.41	5.11	4.92	57.30
MS-2	075	35.20	13.72	4.05	4.08	57.05
ZP (SMV)	049	37.14	13.06	3.55	3.29	57.04
ZP (B)	094	34.82	12.97	4.27	4.12	56.17
MS-6	069	34.57	12.71	3.54	4.16	54.97
MS-9	033	32.36	12.58	3.94	4.06	52.94
MS-10	016	30.81	12.00	3.56	4.00	50.38

The striking thing about this table is that the highest ranking school is not MP, the private school, but a G, a ZP school (although the difference is probably not great enough to be statistically significant). Moreover a municipal school (MS-4) ranks fifth overall. Conversely, a ZP school (B) ranks fourth from the last. The last three places, however, are unequivocally held by municipal schools.

Discussion

How can we account for the significant differences in our three categories of schools (municipal, ZP, and the private MP), and similarly, for the variability among municipal and ZP schools? Without more background data any comments must necessarily be impressionistic. Still, refusal to comment until all the data are in would be sheer pedantry, for some of the answers are obvious enough.

To begin with, the relatively high performance of MP is not unexpected, though it should be understood that this is not the kind of private school that the term suggests to Western readers. In Maharashtra and many other parts of India as well, historically much of the early initiative in the founding of schools was taken by private citizens who banded together to form education societies. These schools usually had a broad-based student body, serving a large proportion of the total student population of the town. This is the case with MP, which by itself has an enrollment of 1,466 students in its four standards (1 to 4), while the 12* municipal schools in all have a total enrollment of 2,379 in the first four standards.

Though unlike many such private schools MP does not accept government funding, its fees are relatively low; the school makes ends meet by paying low salaries to the teachers and by having a high student-teacher ratio. (Average class size is 56.)

While MP is not exclusively for the elite, the average socioeconomic and educational level of students' parents is much higher than in the municipal or ZP schools. This means that the MP parents are able to help their children with their studies. It also means that the parents are likely to exert pressure to ensure the maintenance of

*In our survey of the third standard there are only 11 municipal schools, as MS-11 does not have a third standard class.

standards in the school. Equally importantly, such parents generally see to it that their children attend school regularly.

It should perhaps also be mentioned that it is a matter of common knowledge that a large percentage of MP students take private tuition from their teachers. This means in effect that the school fees are not as low as they appear to be. Moreover, this arrangement enables the teachers to make up for the low salaries they receive. The arrangement also helps offset the disadvantage of the high student-teacher ratio in the regular classes.

Another important factor in the better performance of the MP students is that a large proportion of them have received two years of pre-primary instruction. It is likely too that the average age of the MP children is somewhat higher than that of the municipal and ZP school children.*

Municipal Schools

The situation in the municipal schools is in many respects diametrically opposed to that of MP. The only advantage that many of these schools have is a favorable student-teacher ratio. (In contrast to MP where the average third standard class size is 56, in the municipal schools the average size is 43.)** This advantage, however, is often offset by frequent merging of classes under the supervision of one teacher. In some cases this is for only an hour or so, while the class teacher is out (often, to the head office). In other cases, because of the lack of a teacher two classes may be merged for months on end.

The salient fact is that for the most part only those parents who have no other recourse send their children to municipal schools. This means that the students attending these schools are the children of poor, Backward Caste, illiterate parents. Table 9, which compares the caste composition of the municipal schools with that of MP clearly shows the burden the municipal schools are working under. The classification used in this table needs some clarification, so the terms and initials used are explained below.

(1) SC (Scheduled Castes): the castes included in the official government list (schedule) as former Untouchables. In this area the predominant Scheduled Castes are Mahars, Buddhists, Mangs, Chambhars, Bhangis, Dhors, Holars and Buruds.

(2) ST (Scheduled Tribes): the tribal groups listed in the government schedule. This area has few tribal groups. The largest, the Phase Pardhi, are so marginalized

*It is difficult to compare the ages of children in MP and the municipal and ZP schools, as the age data for poor children are extremely unreliable.

**There is a considerable range in class size within the municipal schools. In our survey of the third standard the smallest class size was 14 (in MS-10) and the largest 69 (in two sections each of MS-3).

that they have not yet started sending their children to school.* There are a few Bhils and Mahadev Kolis in the local schools.

(3) Nomadic Tribes: Tribes at present or formerly leading a nomadic existence. In this area there are a number of such small groups which have settled down during the last few decades. These include mainly Gosavis, Bhois, Ghisadis, Nandiwalas, and Beldars.

(4) Denotified Tribes: Semi-nomadic tribes which under British rule were officially listed as criminal tribes and were placed under certain restrictions. After Independence the criminal label and the restrictions were removed; hence the term "denotified." In this area the predominant Denotified Tribes include Vadars, Ramoshis, Makadwalas, Kaikadis, and Kanjar Bhats. There is a great deal of variation in the degree to which these groups are integrated into society. Ramoshis and Vadars have joined the mainstream to a large extent, and Makadwalas and Kaikadis are beginning to. Kanjar Bhats are completely marginalized as yet. They are still nomadic, and it is unlikely that even a single Kanjar Bhat child attends a local school.

(5) Other Backward Castes: These include a large number of small castes, many of which are service castes or artisans: Malis (horticulturalists), Dhangars (shepherds), Kumbhars (potters), Lohars (blacksmiths), Parits (washermen), Shimpis (tailors), Sutars (carpenters), and Telis (oil-pressers).

(6) Non-Backward Castes: These include mainly Brahmans, Marathas, Jains, Marwadis and Muslims.

Table 9. Comparison of caste composition of municipal schools with that of MP. Percentage of students in standards 1 to 4 belonging to each caste category

School Category	Caste Category SC	ST	NT/DN	OBC	Non-Back.
MP	05.2	0.0	01.7	28.6	64.5
Municipal	31.0	1.7	10.9	30.6	25.8

*The other day in attending a school program in a village I was taken aback to see a number of near-naked, wild-looking children as old as ten or twelve, who had come to watch the program. On inquiring I was told that they were Phase Pardhis. Two or three generations back it was common for children of all castes to run naked, and one generation back, for Mahars and Mangs to do so. Today, however, it is rare, and is an indication that a group has stayed far from the mainstream of society.

In the municipal schools the total percentage of Backward Caste students of all categories is 74.2, in contrast to the total of 35.5 percent in MP. If we disregard OBC and compare the total percentage of the remaining BC categories (SC/ST, NT/DN), the discrepancy is even greater; municipal schools have a total of 43.6 percent, while MP has 6.9 percent.

Of the Backward Caste children, particularly those from the Scheduled Castes come from homes and neighborhoods with all the classical characteristics of the culture of poverty: family breakdown, unemployment, illiteracy, drunkenness, petty crime.* This social breakdown and the lack of rapport between the school and the home all contribute to the irregularity of children's attendance in school and a high rate of dropout and stagnation. Table 10 compares the rates of attendance and dropout in the municipal schools and MP.

Table 10. Comparison of municipal schools and MP in regard to average percentage of attendance and dropout rate

School Category	% Attendance	% Dropouts Std.1	Std.2	Std.3	Std.4
MP	90-95	0.00	0.00	0.00	0.00
Municipal	80-85	9.83	21.47	23.88	11.13

Differences among Municipal Schools

Although the municipal schools as a whole have mean scores on our test that are considerably lower than MP, there are also substantial differences among the municipal schools themselves. Table 11 shows the ranking of municipal schools by total mean scores. Means are also given for each test component.

Table 11. Mean total scores (in rank order) and mean scores for each test component (municipal schools)

School	No. Students	Mean Score Letters	Words 1	Words 2	Sent.	Total
MS-4	029	43.66	18.55	7.86	8.03	78.10
MS-5	061	40.98	16.95	6.69	6.20	70.82
MS-12	014	41.21	16.43	5.64	5.50	68.79
MS-7	084	39.13	15.20	6.23	5.75	66.31
MS-3	125	39.09	15.08	5.79	5.65	65.61
MS-1	040	38.00	14.78	5.88	5.47	64.13
MS-8/13	036	34.75	13.39	4.53	5.58	58.25
MS-2	075	35.20	13.72	4.05	4.08	57.05
MS-6	069	34.57	12.71	3.54	4.16	54.97
MS-9	033	32.36	12.58	3.94	4.06	52.94
MS-10	016	30.81	12.00	3.56	4.00	50.38

*Though this description would seem to apply to inner-city ghettos in the United States, the level of crime and violence is lower here. Murders and other serious crimes are relatively rare. ("Here" means only the town we are studying, of course.)

It would be reasonable to expect that the ranking of a school in the survey test is correlated with the school's composition and also with its average attendance. While we do not yet have data for all 11 schools, for the 9 schools we do have data for, there is evidence of a definite, though small correlation with each of these factors.

Since the municipal schools have a preponderance of Backward Caste students, let us examine the hypothesis that there is a negative correlation between the ranking of a school and its percentage of what we might think of as the "hard-core BC" (that is, SC/ST/NT/DN, which we will refer to by the inexact but convenient label "BC".) To test this hypothesis we can use the Spearman rho rank difference correlation coefficient. Let us look at Table 12 which shows the ranking of schools by survey scores and the percentage of BC students. In column 1 schools are ranked in order of the mean scores obtained in our survey. Column 2 (R_1) indicates this rank order, and column 3 gives the percentage of BC students in the school. Column 4 (R_2) gives the caste ranking of the school, the highest ranking (1) being given to the school with the lowest percentage of Backward Caste students.

Table 12. Correlation of ranking of municipal schools (by mean) in survey and percentage of BC students in third standard classes

School	R_1 Survey	% BC	R_2 BC
MS-4	1	00	1
MS-5	2	20	3
MS-12	3	86	9
MS-3	4	50	5
MS-1	5	22	4
MS-8/13	6	67	6
MS-2*	7	82	8
MS-9	8	15	2
MS-10	9	80	7

If there were a perfect correlation between the survey scores and the percentage of BC students, the results would look like that for MS-4, where both factors have the same ranking. This is obviously not the case. The Spearman rho rank difference correlation coefficient for this table is .33**, indicating a definite but small relationship between the performance of the school in the survey and the caste composition of its students.

If we look closely at the table we see that the major discrepancy between the two rankings is due to two schools: MS-9 and 12. If we ignore these two schools the

*For MS-2 we have caste and attendance data for only one section, but this is unlikely to cause any distortion.

**The formula used for computing this correlation coefficient is given in the appendix.

correlation coefficient for this table goes up to .86, indicating a marked relationship between the caste composition of a school and its ranking on the test.

The school in last place, MS-10, deserves a word of comment. The children in this school are predominantly Gosavis, a nomadic people who settled on the edge of the town about 25-30 years ago. Their mother tongue is a dialect of Gujarati, and the children entering school have not mastered spoken Marathi yet. As far as I know, no attempt is made to teach spoken Marathi in the first couple of years of school. There is only one teacher for four standards (a total of 51 children).

Let us now look at the correlation between the ranking of the schools in the survey test and the average attendance in the classes surveyed (Table 13).

Table 13. Correlation of ranking of municipal schools (by mean) in survey and average percentage of attendance in classes surveyed

School	R_1 Survey	% Attend.	R_2 Attend.
MS-4	1	99	1.0
MS-5	2	84	7.5
MS-12	3	91	4.0
MS-3	4	87	5.0
MS-1	5	86	6.0
MS-8/13	6	93	3.0
MS-2	7	84	9.0
MS-9	8	98	2.0
MS-10	9	84	7.5

The Spearman rho rank difference correlation coefficient for this table is .30 — practically the same as for Table 12. However, the data for MS-9 is suspect. The figures show that in that class all but two students had 100 percent attendance, something that is hard to believe, especially in view of the poor performance on the survey.

Some Reasons for Hope

The demographic and other realities in the municipal schools are so overwhelming that it is easy to conclude that these schools and their students are doomed to failure. But there are some reasons for hope. First of all, unlike inner city schools in the United States, there is no gross indiscipline, violence, or drug-taking, (About this last I am crossing my fingers, as drugs have recently started hitting the middle-size cities.) Moreover, the results of our survey suggest that while on the whole the schools with the lowest percentage of Backward Caste students have the highest mean scores, there is some evidence that a dedicated teacher can produce results totally unexpected from the demographic composition of his class.

With this in mind let us look again at Table 12 and consider the result for MS-12, one of the two schools with a marked discrepancy between its survey ranking and caste ranking.* This school has 86 percent Backward Caste students (mostly Nandiwalas), yet it ranks third among the municipal schools in our test—an amazing result, especially when we consider the conditions in the school. MS-12 is a single-teacher school, with a total of 52 students in standards 1 to 4. It is housed in a tiny thatched hut into which water pours when it rains. The only furniture is a small table and chair for the teacher, and a rough box for records and materials.

The teacher himself is a Gosavi, a member of a former nomadic tribe, though his own family is long settled and is both prosperous and prestigious. The teacher's energy, enthusiasm and love for his students are abundantly clear. He gives extra time to prepare his best students for the fourth standard scholarship examination and is one of the few municipal teachers who took the trouble to have his students participate in the all-school athletic meet held in town two years ago. His accomplishment shows that energy and dedication can to some extent offset the negative effects of poverty, low caste, and lack of facilities and materials. Yet one cannot help but wonder what this young man might do given a little guidance, another colleague or two, and facilities and materials to work with.

The Teachers

A rare individual like the teacher in MS-12 can to some extent overcome a host of negative conditions and achieve reasonably good results. But what about the others? Why are their results so poor in comparison to MP? Is the difference in success rate due only to the fact that municipal teachers are working with impoverished, low-caste children of illiterate parents? Or are the municipal teachers less competent and less caring than their counterparts in MP?

Some scattered evidence made me feel the former might be the case. For example, the same teacher who last year taught the class in MS-6, which ranked second to last in our survey, this year taught the class which ranked highest (MS-4).** The experience of a young woman teacher in MS-2 was also striking. She told me that she had deliberately chosen the first standard as she had wanted to show that given a fresh batch of students she could achieve outstanding results. She had experimented with individual instruction and had spent out of her own pocket for teaching aids, she said, showing me the cards and other materials she had made. But, she felt, because of the irregular attendance of her students and their lack of response she had achieved nothing.

Though it was clear that the woman had little sense of class management (to her

*The other anomalous school is MS-9. On the survey it ranks second from the last, while in caste ranking it is second highest. I do not know enough about this school to explain its poor performance, although the fact that the third standard teacher has reported highly dubious attendance figures suggests that the poor test results are mainly due to the teacher. (See page 22).

**Part of the reason for the poor performance of her last year's class is that there was a shortage of one teacher so she had to look after two classes—a total of 100 students.

individual instruction meant concentrating on one child while the rest sat looking into space) she struck me as bright and sincere. On mentioning her to the Administrative Officer, however, I got a very different view. Just two days before, the AO said with some exasperation, she had been one of the teachers he had found chatting out on the verandah while their students sat in class unattended and unoccupied. The AO does not deny that his teachers face an uphill task because of the nature of their student population; nevertheless, he feels that many of them are lazy and indifferent. This was not always the case. Thirty years ago in MS-2, teachers went from house to house and literally dragged children to school. There was a sense of mission, fired by the Independence movement and the Untouchable movement under Dr. Babasaheb Ambedkar. Such movements can sustain their elan only for limited periods of time, however. In the absence of a vivifying ideology, only a sober commitment to professionalism can maintain standards.

On the whole I think it is fair to say that many, if not most, municipal teachers look upon their position as a job rather than as a profession, and have little pride in the quality of their work. There are exceptions--teachers who experiment and innovate, who work overtime--but often they are frustrated. More often than not, they are resented by their colleagues, who feel that any extra work on the part of one teacher will make the others look bad. In addition, there are no institutional provisions for the recognition of merit.

With the coming of the new Administrative Officer, things are beginning to change. On the one hand, he strictly enforces discipline and promptness among the teachers. On the other, he recognizes and encourages those teachers who are trying to accomplish something. Just as there is an atmosphere in a town and in a school, so there is also an atmosphere or tone to the administration of a school system; and the new AO is certainly trying to create a positive atmosphere in the local system.

However, it must be conceded that he has an uphill task, as he has to work with teachers who are half-educated and ill-trained. Officially the qualifications required for primary teachers are SSC (Secondary School Certificate, issued after passing the government examination at the end of the tenth standard) and D.Ed. (Diploma in Education, issued after successful completion of a two-year course in a primary teachers' training college). As the brightest students go on to higher secondary school (junior college) after SSC, generally only those who have no other prospects opt for D.Ed. In my experience the majority of students passing out of the primary teachers' training colleges have practically no knowledge of literature, science, history, current events--or just about anything. They know just slightly more than what they have to teach; and what they have learned in training college often amounts merely to rote memorization. One young man astonished me recently by rattling off a list of various teaching methods, but from what I could see of his performance he had no feel for the essential thing: the problem of communicating with a child and helping him/her understand something new.

Administrative and Political Neglect

The Administrative Officer is also hampered by having to work in a local school

system that has for years been plagued by administrative and political neglect. Until only two or three years ago the government schools in the municipal limits were under the control of the Zilla Parishad, despite a government order in 1979 that such schools be handed over to the Municipal Council.

This means that for a period of about eight years these schools were in a state of limbo. The Zilla Parishad was not interested in investing time or money in them, as the schools were destined sooner or later to go out of their control, and the Municipal Council could do nothing as the schools were not yet in their control. Finally in 1987 the Municipal Council took over the schools, but this move was opposed by the ZP, and the matter went to the court. Legal and political wrangles have continued, and as a result, the School Board required by state law has yet to be constituted. With the appointment of a full-time Administrative Officer in charge of the schools the situation has improved, but the Administrative Officer is hampered by having to function without a School Board and even without office space.

As the result of official neglect for so many years, the municipal schools are in deplorable physical shape. Most classrooms are in a state of disrepair. In MS-1, a beautiful building in its day, the patent stone floors are broken up and the children have to sit on gravel. In MS-3 there is a tiny classroom so dark that the children cannot see their own slates, leave alone the small blackboard at the front of the room. The entire atmosphere is, as one observer put it,"Dickensian."

Though the Administrative Officer can sanction money for minor repairs, there are practical difficulties in getting the work done. It is up to the principal to find a mason or carpenter, gather the material, and supervise the work---a task that can daunt the most devoted school head. Principals and teachers also have to contend with vandalism. Vandalism has fortunately not reached the levels it has in the United States where sometimes a whole school is mindlessly destroyed*, but local teachers often do not put up anything on the walls because neighborhood children (youths?) insert long sticks through the open windows to pull down anything displayed on the walls.

Zilla Parishad Schools

The Zilla Parishad schools in our survey showed results significantly higher than the municipal schools, though substantially lower than MP. As the 13 schools covered represent only about 6 percent of the total number of ZP schools in the taluka, and primarily the larger schools at that, it may be that as we survey schools in the smaller villages we may find that the level of student attainment is lower.

But that remains to be seen. The immediate question is: how can we explain the results we now have, especially the fact that the ZP students have attained scores significantly higher than the municipal students? The ZP system is so vast, and my experience of it is still so limited that I cannot answer this question with any

*Last year while I was in the United States two teenagers in St.Paul, Minnesota took a forklift truck and completely destroyed their high school, causing millions of dollars' worth of damage.

confidence or authority. Clearly, however, the lower proportion of BC students in ZP schools must be a major reason for their having higher scores than the municipal schools. In a village generally everyone goes to the same school, so unlike the municipal schools the ZP schools do not have a predominantly poor, Backward Caste student population. The marked difference in caste composition between ZP and municipal schools is evident in Table 14.

Table 14. Percentage of students in each caste category in standards 1 to 4 in ZP and municipal schools

School Category	Caste Category SC	ST	NT/DN	OBC	Non-Back.
ZPS	10.8	0.7	07.4	45.2	35.9
MS	31.0	1.7	10.9	30.6	25.8

The picture shown in this table is an extremely significant one, one too often ignored by our planners. In the state and central governments there is a widespread perception that it is the rural areas that are in the greatest need of government assistance. In the urban areas, the argument goes, the level of prosperity is much higher than in the rural. By the same token, it is assumed that the educational problems are most urgent in the rural areas. In all this reckoning the taluka-level town is willy-nilly classified as urban, and little attention is given to the fact that as far as government-run primary education goes, the town is worse off than the village (and undoubtedly than the large city as well).

On the whole our researchers found that the atmosphere in village schools was much more positive than in municipal schools. In the village schools there was often a happy, active spirit; the children were involved in cleaning the classroom, carrying water, or planting trees. In the municipal schools, on the other hand, it was as if the weight of the nearby slum was reaching out, laying its heavy hand on children and teachers alike.

Differences among Zilla Parishad Schools

Although Zilla Parishad schools overall did better on our survey than municipal schools, there is a substantial degree of variation of performance among the ZP schools. Table 15 shows the ranking of ZP schools by total mean score. Means are also given for each test component.

Table 15. Mean total score (in rank order) and mean scores for each test component (Zilla Parishad schools)

School	No. Students	Mean Score Letters	Words 1	Words 2	Sent.	Total
ZP (G)	64	44.98	19.55	9.36	8.66	82.55
ZP (S)	34	43.71	19.35	8.71	7.97	79.74
ZP (V)	174	44.35	18.88	8.24	7.47	78.94

(cont.)

Table 15, cont.

School	No. Students	Mean Score Letters	Words 1	Words 2	Sent.	Total
ZP (GW)	29	43.07	18.24	7.97	7.38	76.62
ZP-1 (T)	55	42.80	17.51	8.07	7.40	75.78
ZP-2 (T)	47	39.90	15.98	6.55	5.98	68.49
ZP (N)	56	37.64	15.23	6.68	6.30	65.86
ZP (RCV)	16	40.06	14.13	5.63	5.06	64.88
ZP (R)	94	37.17	14.10	5.34	5.14	61.74
ZP-1 (VD)	64	36.14	14.13	4.91	4.98	60.16
ZP-2 (VD)	37	33.86	13.41	5.11	4.92	57.30
ZP (SMV)	49	37.14	13.06	3.55	3.29	57.04
ZP (B)	94	34.82	12.97	4.27	4.12	56.12

The most striking thing about this table is that the highest ranking school is the ZP school in village G, a wealthy village in the irrigated area of the taluka. It is also the home of the local MLA (member of the state legislative assembly) and has consequently received generous inputs from the state government. The lowest ranking school (B), on the other hand, is a poor village in the dry area of the taluka. This suggests that there is a correlation between the overall economic level of the village and the attainment of students in school.

Without more data this is, of course, only an hypothesis. But can we suggest a plausible explanation of how poverty is translated into poor school performance? Most obviously, poor children cannot afford textbooks, slates, notebooks, or uniforms. Ironically, the requirement that a child wear a uniform (which is intended to minimize the disparity between children) often becomes an obstacle to a child's attending school. Moreover, the poor child is often malnourished and unable to attend to his/her studies. Beyond these immediate factors, however, severe poverty destroys morale — of individual families and of the village as a whole. A dry, sun-baked town dependent on an erratic monsoon for a few bags of grain, has an air of despondency relieved only by a nightly alcoholic stupor. The despair of such a place is inevitably communicated to the children. On the other hand, in a village with ample irrigation water, where large numbers of people are prospering from sugarcane cultivation and horticulture, there is an atmosphere of life and activity. Jeeps and motorcycles zip by on smooth tarred roads. The taluka town is only minutes away. In such an atmosphere children are more likely to develop a positive attitude toward themselves, their schoolwork, and toward life in general.

Of course, as we saw in regard to municipal schools, there is nothing rigidly deterministic about all this. Individual teachers can to some extent overcome the depressing effects of the local environment. I saw one arid village where an enthusiastic teacher had organized his students to plant trees five years ago. Today in front of the school there is a lovely shady grove, a source of pride and pleasure

to students, teachers, and townspeople. What is more, over time the combined effect of the work of a number of dedicated people creates the intangible but powerful force we call tradition, which can enable teachers and students to achieve even under adverse conditions.

Government Policies

In discussing the ZP schools I have tended to accentuate the positive, as their results are substantially better than the municipal schools. Nevertheless, the brutal fact is that in the government schools—municipal or ZP—the overall performance of the students is abysmal. And there is no question that state government policy has made matters worse. Leaving aside for the time being the complex questions of teacher education and certification, funding and administration, let us look at two simple matters of educational policy that have far-reaching consequences: the age of admission to the first standard, and the promotion of all children in the first two standards regardless of their attainment.

The National Policy on Education formulated in 1986 by the central government declared that a child must have completed six years of age at the time of entering the first standard. This was a wise decision; a child entering school at the age of five often does not have the requisite physical or cognitive skills for learning reading, writing, and simple arithmetic. Even if he/she has no difficulty in the first two years, by standard three, when the curriculum gets more demanding, the child is likely to start floundering. Despite this central government decision, the policy in the town (and, presumably in the state as a whole) is still that a child is to be admitted into the first standard at the age of five. Moreover, because poor, illiterate parents often do not have birth certificates for their children, they do not even know how old the children are, and are likely to grossly overestimate their ages. One teacher showed me in despair a girl who could not have been more than four, but as her mother had made a declaration that she was six, the girl had to be admitted into school. In every class, the teachers said, there are at least four or five such children. These children (and many five-year-olds) sit in the first standard class throughout the school day with utterly blank faces, not in the least comprehending what is going on.

This problem was compounded by the state government's decision several years back to promote all students at the end of the first and second standard. The rationale of this decision was that if a child fails, the parents are more likely to take him/her out of school. As a consequence we have the situation seen in our survey where the majority of the students in the third standard do not have the basic reading skills expected of first standard students. Needless to say, the same goes for arithmetical skills as well.

The problem is further compounded by the mindless way many teachers deal (or fail to deal) with it. Ignoring the fact that their students have not mastered the basic skills, they blithely teach the assigned syllabus. One day while visiting a second standard arithmetic class I was surprised to see that the teacher was teaching addition and subtraction of two-digit numbers. In our own school we hadn't gotten

that far. Curious, I asked the teacher if I might ask some of the students questions individually. She assented, so I called a number of students aside one by one. Most of them could not recognize even two-digit numbers other than the multiples of ten. Later when I asked the teacher why she was teaching material the students were not ready for, her answer was that she had to complete the syllabus.

The same thing happens in reading class. Only in rare exceptions does a teacher attempt any remedial work. Even those who would like to help children who have fallen behind, lack both the materials and the knowhow to do so. At the most, they ask the children to follow along with their fingers in the textbook as the teacher reads the lesson. In this way some children eventually learn how to read. Others who could learn to read with some remedial instruction never do, and eventually they drop out of school or are weeded out in the third and fourth standard examinations. Table 16 showing the dropout rate in standards 1 to 4 of the ZP schools, indicates that the largest number of students leave school at the end of the third standard.

Table 16. Percentage of dropouts in standards 1 to 4 of Zilla Parishad schools

Standard	% Dropouts
1	09.0
2	03.0
3	12.0
4	01.5

Materials and Methods

For the majority of teachers the only teaching materials available are a single blackboard and chalk, the students' slates and slate pencils, and the textbooks. These humble tools of the trade deserve a closer look.

A central government study several years ago revealed that many classrooms throughout the country do not have a blackboard. Our local schools do have them, but they are of such poor quality that their usefulness is limited. The blackboards are usually about 3' x 3', and are made of wooden planks loosely joined together and painted black. Often the paint has worn off, so the teacher is writing with white on white. The chalk too is of poor quality and often leaves only a faint impression. For an eraser a rag is used.

The slate is a child's badge of entry into the first standard. Almost every child, in the town, at least, can afford a slate of some kind at the beginning of the year. But after several months the slate is often lost or has become unusable. The slates come in a variety of materials and sizes. Today there are slates made of plastic and of chemically treated plywood. They are of excellent quality but they are costly (selling for about Rs. 10) and are not likely to be found in government school classrooms. The best quality slates in common use are the traditional ones made of

real slate. They vary in size from 6" x 8" to 10" x 12" and in price from Rs. 3 to Rs. 5.50. These slates have a uniform, smooth surface and are excellent to write on. Their disadvantage is that they are very fragile; after a few months a child is likely to have a slate broken into several fragments. In another month or so the broken pieces fall out and the slate is completely useless. More often parents choose cheaper but more durable slates, made of thin metal sheets or of hardboard. Prices range from Rs. 2.50 to Rs. 4. The disadvantage of the metal sheet is that when the wooden frame breaks or falls off, the edges of the sheet—particularly the corners—become dangerous, and are likely to inflict a bad cut on a child's hand, or injure someone else's eye (especially in the inevitable scuffles between children). Moreover, when the paint starts to peel off or the slate gets dented, it becomes harder and harder to write on. Hardboard slates are not very satisfactory either, as they quickly get spoiled by the water used for cleaning them.

Some American teachers, lost in a sea of paper, are beginning to extol the advantages of the slate, but we must be open-eyed about its limitations. Besides the physical properties of the slate itself, the basic difficulty with it as an instructional tool is that whatever is written on it exists only momentarily. With 40 students to look after, a teacher finds it impossible to check each child's slate before it is erased. Thus it is very difficult for the teacher to keep track of what each child knows.

Until we achieve some kind of technological breakthrough and find a cheap, satisfactory material on which schoolchildren can write (a project which requires serious attention), the only alternative I can see is to supplement the use of slates with paper—loose sheets or notebooks—in the early primary grades. I say this with trepidation, considering the shortage of paper and the skyrocketing prices. I also realize that increasing each child's consumption of paper could further escalate the already disastrous rate of deforestation. Both from an economic and ecological point of view we must be committed to the conservation of paper. Still, with some imagination it should be possible for us to make some paper available for children to write on. In the towns, at least, we could perhaps get used paper, blank on one side, from local factories and offices (especially the large amounts of paper wasted by computers). Furthermore, we should rethink the question of what we want to use paper for. This means, among other things, rethinking the use of the textbook.

In Maharashtra with the founding of the Maharashtra State Bureau of Textbook Production and Curriculum Research (popularly called Balbharati) in 1967, production of primary textbooks became a monopoly of the state government. All recognized schools are required to use these books. With the economies of scale it enjoys, Balbharati puts out attractive, well-printed books on excellent paper at reasonable prices (though last year the price of Rs. 10 for the first standard Marathi book gave people a shock).

Given the high production standards of Balbharati books, one hesitates to be critical. Yet the fact is that despite the superficial attractiveness of the books the quality of the contents varies greatly from one book to another. In regard to the Marathi readers I think it is fair to say that their strength lies in their literary quality (in the books for the later primary grades) and their weakness in lack of knowledge of the

learning process.

It is instructive to consider how a Balbharati textbook is written. Each book is drafted by a committee, which works within the guidelines of the central and state government education policy and the detailed directives of the Maharashtra Council of Educational Research and Training (MCERT). The committee includes Balbharati staff members, teachers, and outside experts. One of the major problems is that in regard to the learning process we have so few experts available. (Those who are available are often in special education or occupational therapy, fields which have remained on the fringe of the educational establishment.)

But in a sense the question of quality is irrelevant. The basic issue is whether a single monolithic organization (which itself is part of a centralized bureaucratic structure) should have complete monopoly over the production of textbooks. This hierarchical setup stifles creativity, initiative, and even critical thought. For example, some years ago I talked to an official of Balbharati (now retired) about the need to do research on the methods of teaching reading. This man had written an article several years earlier, making a persuasive argument for such research—research which is part of the basic mandate of Balbharati. But years in the organization had taken their toll on the man. I was shocked to hear him say, "People like you can ask basic questions. All we can do is undertake the research projects we are told to."

There is a curious contradiction in this country. We Indians are by nature an anarchic lot. (Witness the crush of people trying to push into a State Transport bus.) Yet despite this (or because of it?) we fear freedom and are anxious to build ever-increasingly elaborate bureaucratic structures. Today we are talking about a uniform national curriculum for primary education—a curriculum intended, of course, to "foster the individual child's creativity and initiative."

The same mindlessness reaches down from Balbharati to the ultimate users of the textbooks: teachers and students. Once a teacher gets a textbook (and the accompanying teacher's handbook) he/she generally uses it as the sole basis for the content and method of instruction. For the student the textbook is something to be memorized. A year or two back a girl in the second standard puzzled me by offering to read a lesson without looking at it. When I told her to go ahead she proceeded to recite the lesson word for word from beginning to end.

It is time we asked ourselves what we want of a textbook—especially in the early primary grades. In fact, we must ask ourselves if at this level we need textbooks at all. If we do, is it necessary for every child to buy one? Perhaps our language texts should be readers cum workbooks. Perhaps by sacrificing paper quality and color printing we could make more workbook pages available to children. Besides, as the innovative educator Gijubhai Badheka suggested years ago, there is no reason why every student in a class needs to buy the same book. If a few students buy the textbook and the rest spend an equal amount on other books, the class could have a small library.

I think we also have to consider the possibility of using inexpensive techniques for

projecting drill and reading material on the wall. This will at once reduce our consumption of paper and will help focus children's attention on what is being taught.

The main thing is that teachers, students, and administrators must be freed from the tyranny of the textbook. They must learn to look beyond the immediate content of a given lesson to the underlying instructional goals. In this regard the UN-sponsored program called "Education for All" is a hopeful development. The program, among other things, is trying to formulate concrete goals for the mastery of the basic skills in the primary grades. If we can help teachers, students, and administrators focus on instructional goals rather than on the textbook, we may be able to reduce the mindlessness so evident in our current educational practice.

Afterword

A former Director of Education of Maharashtra declared several years ago that the primary education system in the state was on the verge of collapse. There may have been some hyperbole in the statement, but our limited survey suggests that the assessment was not far from the truth. The problem is a systemic one: myriad factors interacting with each other to create a state of near collapse: a student population drawn preponderantly from the poorest, most backward section of society, with all the attendant social and economic problems; parents and teachers at odds, eyeing each other with mutual suspicion; political and administrative neglect; ill-educated and ill-trained teachers, many of whom are frustrated and floundering at best, and lazy or indifferent at worst; government policies which compound the problems they are intended to solve; an overcentralized and unwieldy bureaucratic structure and above all, an all-pervasive mindlessness which has made us lose track of what we are trying to do and why.

And does anybody care? Anybody who is anybody is sending his/her children to a private English medium school. There is a widely held cynical view that the public education system is merely a vast employment guarantee scheme for the otherwise unemployable. But such cynicism is shortsighted and unmindful of the fact that whether we like it or not, the future well-being of the middle class depends on the education of the poor. What Horace Mann, the American educator, wrote in 1846 is still true today, in both the United States and India.

> *They, then, who knowingly withhold sustenance from a newborn child,and he dies, are guilty of infanticide. And, by the same reasoning, they who refuse to enlighten the intellect of a rising generation are guilty of degrading the human race! They who refuse to train up children in the way they should go, are training up incendiaries and madmen to destroy property and life, and to invade and pollute the sanctuaries of society.**

*Quoted by Charles E. Silberman in his *Crisis in the Classroom : the Remaking of American Education* (New York : Random House, 1970), p. 53.

If cynicism is dangerous, pious optimistic platitudes are cheap—and meaningless. Nevertheless, hard evidence shows that programs and people can make a difference. We have already seen the example of the young teacher in MS-12 who single-handedly teaching 52 children in four standards managed to turn out students who ranked third highest among municipal students in our survey.

Similarly, the supplementary classes conducted by PSS, a voluntary organization working in the town under study, demonstrate that small interventions can make a difference. Under this program, Backward Caste children attending local municipal schools (mostly MS-2 and MS-3) come in their free time for supplementary sessions of two hours per day. Since the 37 PSS students studying in standard 3 were covered as a matter of course, we can compare their scores with those of their classmates who did not participate in the PSS program. The results, shown in Table 17, clearly indicate that the PSS students did significantly better.

Table 17. Mean scores on each test component for PSS and non-PSS students in MS-2 and MS-3

School/ Group	No. Students	Mean Score				
		Letters	Words 1	Words 2	Sent.	Total
PSS*	037	42.27	17.08	6.22	6.35	71.92
MS-3	125	39.09	15.08	5.79	5.65	65.61
MS-3 (non-PSS)	105	38.60	14.76	5.65	5.42	64.43
MS-2	075	35.20	13.72	4.05	4.08	57.05
MS-2 (non-PSS)	059	33.05	12.47	3.47	3.53	52.53

It is also revealing to look again at Table 11, which gives the ranking of municipal schools by total mean score. The PSS total mean score of 71.92 ranks second, bettered only by MS-4 which has a mean of 78.10. On the other hand, when we exclude the scores of the 16 PSS students, the mean score for MS-2 drops from 57.05 to 52.53, and its rank from eighth to tenth. The PSS results are not high enough to make me jump for joy, but they certainly indicate that the intervention of the PSS has made a difference.

Improvement, then, is not an impossible dream, and, thanks to the cooperative attitude of the present school authorities, both in the municipality and the Zilla Parishad, it should be possible to make a positive impact on the local schools. What I propose is a two-year program aimed at improving the teaching of reading and the language arts in standards 1 to 3. While I originally envisioned this project as an inservice teacher training program, the experience of this year has made me realize that the problem is systemic and accordingly our efforts to tackle it must also be

*The first row gives the scores for all 37 PSS students tested, 36 of whom attend MS-2 or MS-3. The second row gives the score for MS-3 overall (that is, including PSS students). Row 3 gives the score for MS-3 when the scores of PSS students have been excluded. Rows four and five are to be interpreted in the same way as rows two and three.

systemic; that is, we must focus simultaneously on the various components of the system. While preparation of materials and teacher training workshops will remain the heart of the program, monitoring the attendance and progress of children in experimental and control classes, and carrying on a dialogue with politicians and educational authorities (local and higher up) are also essential. Finally, some attempt must be made to create a measure of rapport between parents and teachers. None of this is very grandiose. But it is by focusing on the nitty-gritty—both of instructional practice and day-to-day human interaction—that we may be able to infuse some degree of mindfulness in the way we teach our children and run our schools.

Appendix

The Spearman rho (ρ) rank-difference coefficient of correlation is computed by the following formula : *

$$\rho = 1 - \frac{6\Sigma D^2}{N(N^2-1)}$$

where ρ = sum of the squared difference between ranks and N = number of pairs of measurements.

*J. P. Guilford, *Fundamental Statistics in Psychology and Education* (New York : McGraw-Hill Book Company, 1956). International Student Edition (Tokyo : Kogakusha Company, Ltd.).